CLAIMS :

1. An electric motor comprising:

a rotor; and

a stator;

wherein the rotor is supported on a substantially spherical bearing and is of a substantially spherical design facing the stator;

wherein the stator has a magnetic return-path body made of a compressed powder material; and

wherein at least segments of the return-path body facing the rotor are of a substantially spherical design facing the rotor.

2. The electric motor according to claim 1, wherein:

the return-path body is a compact body or comprises compact return-path body elements.

3. The electric motor according to claim 1, wherein:

the return-path body is composed of a plurality of return-path body elements.

4. The electric motor according to claim 3, wherein:

adjacent return-path body elements are connected via a plug connection.

5. The electric motor according to claim 1, wherein:

the return-path body comprises a plurality of segments each having a substantially spherical surface facing the stator.

6. The electric motor according to claim 5, wherein:

adjacent segments are magnetically separated.

7. The electric motor according to claim 5, wherein:
a gap is provided between adjacent segments.

8. The electric motor according to claim 5, wherein:
segments are connected to one another via a return-path area.

9. The electric motor according to claim 1, wherein:
the return-path body surrounds the rotor in a ring shape.

10. The electric motor according to claim 1, wherein:
the powder material comprises iron granules electrically insulated relative to one another.

11. The electric motor according to claim 1, wherein:
the return-path body has at least one coil receiving portion.

12. The electric motor according to claim 11, wherein:
the coil receiving portion is provided with an electric insulation and/or an accommodated coil is provided with an electric insulation towards the coil receiving portion.

13. The electric motor according to claim 11, wherein:
the at least one coil receiving portion is arranged and designed such that accommodated coils do not project beyond a spherical area of the return-path body in the direction of the rotor.

14. The electric motor according to claim 11, wherein:
an air gap formed between the rotor and a spherical area of the return-path body is free from coils.

15. The electric motor according to claim 11, wherein:

the return-path body has a plurality of recesses as coil receiving portions or for the formation of coil receiving portions.

16. The electric motor according to claim 15, wherein:

a recess having an area facing the rotor is set back in relation to the spherical surface of the return-path body.

17. The electric motor according to claim 11, wherein:

a coil is wound onto a coil receiving portion.

18. The electric motor according to claim 11, wherein:

a prefabricated coil is positioned on a coil receiving portion.

19. The electric motor according to claim 10, wherein:

a coil receiving portion is dimensioned such that the part of the return-path body located in the area of the generated magnetic field of the accommodated coil is considerably smaller than the area of the return-path body transferring the generated magnetic field towards the rotor.

20. The electric motor according to claim 10, wherein:

a coil receiving portion is dimensioned such that an adequate area of the return-path body is made available in order to transport magnetic flux below the saturation level.

21. The electric motor according to claim 10, wherein:

a coil receiving portion is designed such that a coil with a round or approximately round cross section is adapted to be accommodated.

22. The electric motor according to claim 10, wherein:

the return-path body has a plurality of adjacent recesses as coil receiving portions, said recesses being set back in relation to the spherical surface.

23. The electric motor according to claim 22, wherein:

the recesses are arranged so as to be distributed uniformly around an inner circumference of the return-path body.

24. The electric motor according to claim 22, wherein:

a coil axis of a coil seated in the coil receiving portion lies substantially in circumferential direction of the return-path body.

25. The electric motor according to claim 22, wherein:

a coil axis of a coil seated in the coil receiving portion is aligned substantially radially.

26. The electric motor according to claim 10, wherein:

the at least one coil receiving portion is arranged behind or beneath the spherical surface area of the return-path body facing the rotor.

27. The electric motor according to claim 26, wherein:

the return-path body has a connecting area located transversely to an axis of rotation of the rotor and making a transverse magnetic connection available.

28. The electric motor according to claim 27, wherein:

the at least one coil receiving portion is formed at the connecting area.

29. The electric motor according to claim 1, wherein:

the rotor is a cage rotor.

30. The electric motor according to claim 1, wherein:
the rotor is adapted to generate a magnetic field.

31. The electric motor according to claim 30, wherein:
the rotor comprises a plurality of permanent magnets.

32. The electric motor according to claim 1, wherein:
the rotor is a hysteresis rotor.

33. The electric motor according to claim 1, wherein:
a plurality of coils are arranged on the return-path body as torus-shaped windings.

34. The electric motor according to claim 33, wherein:
a winding axis is substantially parallel to a circumferential direction of the return-path body.

35. The electric motor according to claim 33, wherein:
the return-path body is formed in one piece.

36. The electric motor as defined in claim 33, wherein:
adjacent coils are electrically connected separately.

37. A circulation pump comprising:
an electric motor, comprising:
a rotor; and
a stator;

wherein the rotor is supported on a spherical bearing and is of a spherical design facing the stator;

wherein the stator has a magnetic return-path body made of a compressed powder material; and

wherein the return-path body is of a spherical design facing the rotor, at least in segments facing the rotor.

38. Circulation pump according to claim 37, wherein:

a partition wall is arranged in an air gap between rotor and return-path body.

39. Circulation pump according to claim 38, wherein:

the air gap is dimensioned such that the rotor is not essentially braked by friction in the area between partition wall and rotor.